

NAME: \_\_\_\_\_

Snells Law Worksheet

8. After your discovery in question 5, you set up a small mining operation. A worker (that does not know physics) brings you some crystals from his daily dig. Not trusting him, you pass a beam of light through one of the crystals. You observe that the light enters the crystal at a 30-degree angle from the normal and is bent 19.47 degrees from the normal. What has he brought you?
9. Light travels through a liquid at  $2.2531 \times 10^8$  m/s. What is the liquid?
10. Light travels through a liquid at  $2.0548 \times 10^8$  m/s. What is the liquid? (mmm,tasty)
11. Light traveling through air encounters a second medium which slows the light to  $1.61 \times 10^8$  m/s. What is the index of the second medium?
12. What is the index of refraction of a refractive medium if the angle of incidence in air is 30 degrees and the angle of refraction is 15 degrees?
13. What is the index of refraction of a refractive medium if the angle of incidence in air is 40 degrees and the angle of refraction is 29 degrees?
14. What is the index of refraction of a liquid if the angle of incidence in air is 35 degrees and the angle of refraction is 14 degrees?
15. If the angle of incidence of light traveling through air, striking water, is 30 degrees, what is the angle of refraction?
16. If the index of refraction for a certain glass is 1.50, and the angle of refraction is 15 degrees for a ray of light traveling from air, what is the angle of incidence?
17. What is the velocity of light in a material with an index of 2.0?
18. A light ray moving through CR39 at an angle of 49 degrees exits into another medium at an angle of 41 degrees. What is the index of the second medium?
19. What is the angle of incidence for a light ray traveling from water into flint glass, if the angle of refraction is 30 degrees?